

*If you are using a printed copy of this procedure, and not the on-screen version, then you **MUST** make sure the dates at the bottom of the printed copy and the on-screen version match. The on-screen version of the Collider-Accelerator Department Procedure is the Official Version. Hard copies of all signed, official, C-A Operating Procedures are available by contacting the ESSHQ Procedures Coordinator, Bldg. 911A*

C-A OPERATIONS PROCEDURES MANUAL

15.5.1 AGS, Venting, Vacuum Sector

(Vacuum Group Procedure VA-008.18.1.1)

Note: This document was formerly a C-A Group Procedure. The content of the group procedure was verified for safe and reliable use as an OPM Procedure. All approvals and/or issue dates of the original group procedure are maintained for present use.

Hand Processed Changes

<u>HPC No.</u>	<u>Date</u>	<u>Page Nos.</u>	<u>Initials</u>
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Approved: _____
Collider-Accelerator Department Chairman Date

S. Gill

Vacuum Group Procedure VA-008.18.1.1
Original Issue Date: 01/01/00
Revision 01

1. PURPOSE:

To provide an effective procedure for AGS Vacuum Technicians to vent a vacuum sector in the AGS Ring that has been under “HIVAC” conditions.

2. RESPONSIBILITIES:

- 2.1 The AGS Vacuum Supervisor shall be responsible for the implementation of this procedure.
- 2.2 The AGS Vacuum Supervisor shall be responsible for all enhanced work planning associated with this procedure.
- 2.3 The Vacuum Technician shall be responsible for filling in and/or completing the following:
 - Vacuum Group Maintenance Check Off List (if applicable)
 - AGS Work Permit
 - Radiation Work Permit
 - Radiation Dose Log (@ ring entry gates)
 - Contamination & High Radiation Area Sign-off Sheet (@ ring entry gates)

3. PREREQUISITES

- 3.1 The technician will have been trained in this procedure.
- 3.2 Lockout/Tagout 15.17.00.02
- 3.3 Electrical Safety 15.17.00.04
- 3.4 AGS Ring Access Training.
- 3.5 Activation Worker Training (BNL OH&S Guide 3.5.0)
- 3.6 Safety glasses are required for this procedure
- 3.7 Technician has been trained to at least a level of knowledgeable in LO/TO AGS/HEBT Vacuum ION Pump Power Disconnect
- 3.8 Affected Persons Training 15.12.00.01
- 3.9 Contamination Worker (where applicable)
- 3.10 Radiation Worker Training
- 3.11 The technician shall be familiar with BNL Radiological Stop Work procedure.
- 3.12 The technician shall be familiar with BNL Stop Work Imminent Danger Procedure.

4. PRECAUTIONS:

- 4.1 The Technician shall be aware of radiation levels in the area.
- 4.2 The technician shall be aware of contamination levels in the area.
- 4.3 The technician will ensure that he is in fact using a safe and properly functioning gas regulator and bottle cart. those found to be unsafe shall be returned for repair.
- 4.4 The technician should be aware of what constitutes a vacuum sector. for example, sector 'AB' starts at A14 and ends at the B3 main magnet. sector 'B' Starts at B4 and ends at the B13 main magnet. a schematic representing the entire AGS layout is posted in the vacuum lab.
- 4.5 Check color code on Kirk Key & verify that it matches that of the HV cables in the locked out sector.

5. OPERATIONAL PROCEDURE:

- 5.1 Ensure that a radiation survey has been done by the HP people of the area to be worked in
- 5.2 Close sector valves and disconnect power to those valves U/S AND DIS Of sector to be vented.
- 5.3 Perform LO/TO ION Pump HV supplies
- 5.4 Perform LO/TO procedures for Sector CCG.
- 5.5 Do a rate of pressure rise (where applicable) on sector to be vented.
- 5.6 Affix N2 hose to small hand valve on sector B.T.A. valve.
- 5.7 Set regulator to appx.2 PSIG & Verify that the over pressure relief valve opens freely
- 5.8 Open B.T.A. valve & vent sector to atmosphere.
- 5.9 When sector reaches atmospheric pressure, close N2 Tank valve & remove hose.
- 5.10 Close B.T.A. valve & small hand valve.

6. DOCUMENTATION:

- 6.1 The following must be filled in by the person performing this procedure:
 - Vacuum Group Maintenance Check Off List (if applicable)
 - AGS Work Permit
 - Radiation Work Permit
 - Radiation Dose Log (@ ring entry gates)
 - Contamination & High Radiation Area Sign-Off Sheet (@ ring entry gates)

7. REFERENCES:

- Vacuum Group Maintenance Check Off List (if applicable)
- AGS Work Permit
- Radiation Work Permit
- Radiation Dose Log (@ ring entry gates)
- Contamination & High Radiation Area Sign-Off Sheet (@ ring entry gates)

8. ATTACHMENTS:

- Vacuum Group Maintenance Check Off list (if applicable)
- AGS Work Permit
- Radiation Work Permit

9. ACCEPTANCE CRITERIA:

- 9.1 Sector at atmosphere.
- 9.2 Work area has been cleaned and all equipment and/or tools have been removed from the ring after being checked by H-P personnel.
- 9.3 The following have been completed:
 - Vacuum Group Maintenance Check Off List (if applicable)
 - AGS Work Permit
 - Radiation Work Permit
 - Radiation Dose Log (@ ring entry gates)
 - Contamination & High Radiation Area Sign-Off Sheet (@ ring entry gates)